

**ARMED FORCES INSTITUTE OF PATHOLOGY
ORAL HISTORY PROGRAM**

SUBJECT: Dr. Marc S. Micozzi

INTERVIEWER: Mr. Charles Stuart Kennedy

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Q: Dr. Micozzi, to start with, could you give me something about your background, when and where you were born and a little about your family and early education?

DR. MICOZZI: I was born in Norfolk, Virginia, in 1953, while my father was with the U.S. Navy. There was a big naval base there. His father had in turn immigrated from Italy. My father married my mother from France whom he had met while he was over there right after World War II. And so they married and began a family. I was the firstborn.

We lived in Norfolk for a few years, moved to St. Louis, Missouri, then to Philadelphia, then to Boston, Massachusetts. At that point, my father had left the military and was working for RCA (Radio Corporation of America), and continued moving around the country in that pattern of the 50s and 60s where advancement in a corporation was often linked to relocating your family. I've often speculated that that meant that the loyalty to the company was greater than the loyalty to your own community.

Ultimately, my father ended up in the computer division at RCA. Of course, the computer division of RCA got into a lot of trouble in the late 60s, and in anticipation of that, he moved out to California to take a job in the aerospace industry. And so we ended up living in California. My parents are still there.

When I completed high school, I continued my own travels around the country in terms of getting my undergraduate and graduate training. The net result is that I was never in any one community particularly long. And I guess a part of that was coming to think of myself as a citizen of the country first, and then a community secondary to that.

Q: Where did you have most of your high school?

DR. MICOZZI: High school was in California.

Q: Where in California?

DR. MICOZZI: Arcadia, California. It's in the Los Angeles area.

Q: Oh, yes, right next to Pasadena.

DR. MICOZZI: Right.

Q: Where did the germ of your interest in medicine develop?

DR. MICOZZI: To be perfectly honest about that, I think the germ of the interest in medicine was more or less inoculated by my father at an early age. This was his idea, that this was the best career to have in terms of your service to the community, in terms of your professional opportunities, the opportunity for independence, things of that nature that he valued highly. It was, in my view, part of that immigrant mentality, that one starts as a blue-collar worker, and then the next generation is white-collar, and then the next generation is professional. That was very important. I was the firstborn son of a firstborn son, and I felt that strongly when I was younger. So that was the medicine side of it.

Q: Where did you go to college?

DR. MICOZZI: I started out at the Air Force Academy. I received a congressional appointment to the Air Force Academy. They had a pre-med program at that time, so I was able to combine some interests in education at the service academy with pre-med. In fact, that's the reason I focused my interest on the Air Force Academy, because the other two academies did not have active pre-med programs, whereas the Air Force was encouraging.

No sooner than I got to the Air Force, I remember a fellow called Richard Wilbur, who was the assistant secretary of defense for health care (a position that didn't mean much to me then, but has come to mean a lot since), and his point was that we didn't need to be sending pre-professional students to the service academies. In fact, a plan was announced to decrease the numbers of cadets being allowed to go on to graduate school. So, since I was a member in good standing of the pre-med program, I was able to leave after that first year, together with about 700 other pre-professionals, and went to Pomona College, Claremont, California, which is a place I'd gotten to know while I was in high school out there. I had a year at the Air Force Academy, and then, in two more years at Pomona, I had completed my undergraduate degree and went on to medical school.

Q: When you were on your way to medical school, did you have any feel for what area you wanted to get involved in?

DR. MICOZZI: I guess my own personal feeling was public health. That was the thing that interested me the most. Again, I think it's consistent with this notion that I developed when I was younger, of thinking about things at the national and international level, rather than just at the community level. And so my own interest was public health, even though there weren't a lot of people that were too encouraging about it.

Q: Where did you go to medical school?

DR. MICOZZI: I wanted to come back east at that point, and so I applied to several Ivy League schools on the East Coast, was admitted at several schools, and chose the University of Pennsylvania.

One of the things I liked about Penn, in addition to its history, being the oldest medical school in the United States, was the fact that the medical campus was located right

on the main campus, and one has a feeling of really being in a university setting. Also, the fact that Penn had interdisciplinary programs between the medical school and other schools, so that one could do an M.D/Ph.D. in lots of different areas. And the fact that the campus was all together facilitated that.

Q: What were the years you were at Pennsylvania?

DR. MICOZZI: I came to the University of Pennsylvania in September 1974, and I had my first two years of pretty straight core curriculum.

Then I received a scholarship from the Henry Luce Foundation. This was the third year of the Luce Scholars Program, which is now in its twentieth year. The purpose of that was to take students from graduate school and give them a working-internship-type experience somewhere in Asia. I thought this would be a good opportunity to pursue some of my interests in international public health, and to really experience what it was like to work and live in another part of the world.

Q: So how did that work out? What did you do?

DR. MICOZZI: I chose a placement in the Philippines, for various reasons. I was interested in learning more about tropical medicine, being exposed to some of the diseases that are not common in this country today, and learning how that is dealt with at the local level. My placement ended up being in the development of People's Foundation, which was really, in effect, something like a health maintenance organization for the disadvantaged populations.

There is an interesting situation in Southeast Asia, where, unlike the United States where the suburbs are thought to be the affluent part of town, in the large cities of Southeast Asia the suburbs really are the poor part of town. People have left their rural environments, where they have some indigenous resources, but they can't afford to be in the city itself, and so these urban barrios in the Philippines develop around core cities, and you have people that are kind of caught between two cultures: the traditional rural culture that they came from and the more westernized urban culture.

Particularly with respect to medicine, they've somewhat lost their traditional health resources, but they can't have access to the western-type medicine there in the city, and so some very creative approaches developed in these barrios, these suburbs, where it's a combination of sanitation efforts, educational efforts, disease-prevention efforts, as well as the actual treatment component. What I found interesting about that setting was the emphasis on prevention and education.

Q: So you did that, what, for about a year?

DR. MICOZZI: I did that for one year.

Q: Then where did you go?

DR. MICOZZI: It was time for me to come back and complete medical school. I actually came back with a case of amebiasis, and after two months back at school, I did well academically, but I was feeling very ill. So I took a medical leave, went back home to California for a few months, and got back on my feet.

I wanted to earn some money at that point, so I went to work for McDonnell Douglas, actually, developing some testing protocols for instruments that had been developed for the Skylab and the Space Shuttle. McDonnell Douglas had an automicrobic system that was originally designed to sample remote samples in interplanetary explorations and then see if one could grow any microorganisms. That technology was then being applied to the hospital lab for routine microbiology. So I was involved in developing some of that.

The other instrument that they had from the space program was called the Olfax, which was really a gas chromatograph - mass spectrometer, which again was designed for remote sensing of organic materials. It would run through the columns, be separated, and then be identified in the mass spec. We were then using this in screening for drugs of abuse in an emergency room setting, to identify anyone who might be in a toxic state. So there were various panels, to look at the urine and the blood for drugs and abuse, and then also for therapeutic drug monitoring, which was a new field. Certain drugs, like lithium, phenobarb., some anti-convulsant drugs, needed to be monitored in terms of the blood levels.

And so we were developing protocols for this space technology to be used in clinical settings. I found that quite interesting, and I continued there for almost a year. Then finally I went back to complete my training at Penn, at which point I had made up my mind to pursue a combined degree; that is, an M.D. and a Ph.D.

One of the things that had happened while I was away in Asia was that Penn had started an epidemiology program. Of course, that fit well with my interest in public health and international health, so I came back and enrolled in the M.D./Ph.D. epidemiology program.

Unfortunately, the chairman of that department died suddenly from a ruptured berry aneurism, and rather than reactivate the department, Penn chose to pretty much close it down. Most of the Ph.D. students went to Hopkins or up to Columbia to finish their degree. I was in the medical school residency program, so I was pretty much stuck there. And that's when I moved over to the anthropology program.

Barry Blumberg, who won the Nobel Prize in 1976 for the discovery that what was called the Australian antigen was in fact the surface antigen for hepatitis B, the knowledge of which allowed the prevention of transfusion hepatitis from hepatitis B, had been at Penn and set up an M.D./Ph.D. program in anthropology. So, because of my longstanding interest in anthropology, I then simply moved from the epidemiology program, where I'd completed the course work for a Master's, to the anthropology program, to complete the Ph.D.

Q: For other laymen like myself, could you describe what you mean by anthropology?

DR. MICOZZI: Anthropology is a field that evolved in the late 19th century, and it originally evolved to look at those times and places that other academic fields had not covered. So, in the context of Egyptology, history, Oriental studies, etc., anthropology came along to really look at cultures that didn't have a written history. Anthropology, in one sense, particularly in a museum sense, came about to get information about the past, not through the study of documents, but the study of material culture and that kind of anthropology, archeology orientation. But anthropology arose for the study of people from other times and places that weren't being studied because we didn't have the means of either getting oral tradition information or interpreting material culture. It kind of arose out of the vacuum of history, to study prehistory and what was thought of at the time as preliterate or primitive societies. There were contemporary societies, of course, where there was oral information but no written information, as well as the ancient populations that preceded written records. So that's how anthropology arose as a field.

It came to be viewed, in one sense, as the study of humans (I mean, literally from the Greeks), our origins, the variability in both behavior and biology that's inherent in any population. But the limits as well; there are things that are characteristically human in terms of behavior and biology, within that range of variability.

The other thing that's important about anthropology, to my mind, is the fact that it's been a discipline that has had one foot in the social sciences and one foot in the biological sciences. I think, particularly looking at health, one has to consider the human being and human society as something that has both biology and culture. And both things impact in a transactional way on our health.

So it was all something that fit with my view of health. This particular program that Dr. Blumberg had set up was a concentration in biomedical anthropology, so I felt it really gave me what I wanted in terms of broadening my understanding of how health really is a product of interactions between humans and their environment, both their social environment and their physical environment. And this was kind of the approach that I had.

Q: To get a Ph.D., you have to do a dissertation, don't you?

DR. MICOZZI: Sure.

Q: What was your concentration on, in the anthropology side?

DR. MICOZZI: The way it works at Penn is, you have two major areas and two minor areas, and you basically write what are called field statements for your areas. My two major areas were human diet and nutrition, and human growth and development. Having gone through the written and oral exams in these fields, I then went on to do a dissertation that was basically looking at the patterns of childhood nutrition, growth, and development, and relating those to the long-term risks of chronic diseases, pointing out that there is a relationship between early nutritional experience and the later risks of diseases. Which in fact tells us that intervention by adults to try to prevent disease may be coming a little too

late in the process for certain chronic diseases, and that, optimally, one begins early in life.

Q: Sounds like a massive study. I normally think of Ph.D. work as being very narrow, in a field that nobody ever wants to touch again.

DR. MICOZZI: Well, I guess I was interested in doing something a little more useful. A classic ethnography, or cultural anthropology study, would have been very narrow. But my focus on biomedical anthropology meant that this had the character of an epidemiologic study, which was my Master's field, but very much drew on approaches and methodologies, such as anthropometry, that are used to do anthropology in terms of characterizing the human constitution.

Q: As you progressed, how did you find this broader aspect of looking at the whole person and culture? Has that field flourished, or has it gotten overspecialized?

DR. MICOZZI: Well, this has been my interest. I didn't mention earlier that I was a chemistry and zoology major in college, a double major, and I thought that ultimately one could explain things by reducing them to their elements. Of course, this is the predominant direction of modern biomedical science, that if we understand everything at the molecular level, we'll understand everything we need to know about health and medicine. One can trace that scientific philosophy back to Aristotle, where he felt that if one could understand the four humors, one could understand everything about human character and behavior and health. We just have different names for the four humors today; we talk about DNA (deoxyribonucleic acid) and enzymes.

At some point, I felt that that was not going to explain everything about health and medicine. That ultimately health is something that you experience in a whole, integrated organism at the individual level, at the community level, and at the national level. And that there's another dynamic there that we cannot study in the test tube. And it was that dynamic that ultimately became of greater interest to me.

I think, certainly, putting together our understanding of things at the molecular level with a better understanding of what happens at the level of the whole organism in a community of individuals is really where the rubber meets the road, so to speak, in terms of dealing with the real health care issues, which are not only understanding the biology of medicine, but issues about access, education, organization of health services. These are all the things that really represent the crisis and the frontier in health care today. And trying to understand that better is something that just interested me.

Q: When did you get your Ph.D.?

DR. MICOZZI: When I came back to the University of Pennsylvania from my work in Asia and in California with McDonnell Douglas, and came back into the combined-degree program, I had about one year of full-time schooling, with a full load of courses both in the medical school and the graduate school. And then I began my residency program. So I then

had three years of residency.

Q: Where did you have your residency?

DR. MICOZZI: Pennsylvania Hospital. I took a rotation there during medical school.

I really liked the hospital; it was kind of a unique place, in my view. To some extent, it was a hospital that was left over from an earlier era, in the sense that they had a very strong academic program, but it was run by the hospital and not by the medical school. So this was a hospital that wasn't run by a medical school in the Johns Hopkins model, which was the new model of the 20th century. But they had their own very strong academic programs, and they had their own strong community programs as well. So, in a sense, it was an academic hospital, but was imbedded right in a community.

I also liked the way pathology was done there, which was my field of medical specialty. The pathologist wasn't hidden away in a laboratory with a microscope, but went out onto the floor. We did rounds. We collected various samples out in the wards. We communicated a lot with clinicians. To me, that was the idea of pathology, as the doctor's doctor, in a way.

Q: Does pathology mesh, or meld, with anthropology?

DR. MICOZZI: It certainly does. There are disciplines, like paleopathology, on the one end of the scale, studying disease in antiquity, where they certainly go together and we've done productive work in that area, all the way to the other side of the scale. When you look at anthropology in medicine, if you look at the ethnographic side, or cultural anthropology, that often leads you towards psychiatry. And if you look at the spectrum of medicine, you find the same spectrum in anthropology.

I think, in the end, the thing about pathology that appealed to me, aside from the practice of pathology itself, was that even though the methods of pathology are really quite limited, the scope is great, in that one looks at all organ systems of the entire body, one looks at the young and the old and everybody in between, one looks at men and women, and one does not specialize or focus in one area. So, while the methods of pathology are quite limited, in the sense that you're studying dead tissue, which certainly has its limits, the scope of it is very broad. And I think that's what appealed to me.

Q: So you completed your residency in three years?

DR. MICOZZI: Yes, I did a straight three-year, during which I took two semesters back at the University, doing my core course work. And then the rest of the time, I was pretty much on my independent base, developing my dissertation work and preparing for my written and oral exams.

Q: And from there, you went where?

DR. MICOZZI: Well, I should mention, parenthetically, that the anthropology department at the University of Pennsylvania is situated in the university museum. So, during all this time, I was also getting exposure to what a museum is, how it works, how it operates, what it's all about. And so I learned a lot about the museum side through my anthropology work.

In June 1983, after three years of work, I'd completed both courses and found that, as an M.D. with specialization in pathology, and all but dissertation in anthropology, I was a very attractive candidate to medical examiner offices, which have need for physical anthropology, forensic anthropology, as well as, of course, the standard forensic pathology in medical examiner work.

Q: What is a medical examiner?

DR. MICOZZI: A medical examiner is a municipal official, either a state or a local official, who is charged with determining the cause and manner of deaths that occur in that jurisdiction, particularly deaths that are not attended by a physician. So this would be homicides, suicides, accidents, and certain natural deaths, again, not attended by a physician and where there is some suspicion. That's the scope of the medical examiner's work.

I found that interesting, because the anthropology connection, of course, is there in a very practical sense, in that some of the cases that are investigated consist of skeletal remains. And so the interpretation and examination is all based upon physical anthropology, in which I had background.

But, more generally, the work of the medical examiner is not in the laboratory or in the office, it is out in the community. And the best medical-examiner systems place heavy emphasis on sending medical examiners out into the field. So, even though the highest-profile part of the work is murder, that's only about 20 percent of the caseload. In the other 80 percent of your cases, you're really finding out what are the sources of morbidity and mortality in the community. Why are infants dying of dehydration and disease? Why are people dying in the workplace of industrial accidents? There is a major community orientation to most of the work of the medical examiner, even though the high profile goes to that small part having to do with homicide.

Q: Did you get into this field?

DR. MICOZZI: Yes, I went to Miami, through a fellowship. I was a fellow in forensic pathology and associate medical examiner for Miami, Dade County, which was one of the great medical-examiner offices.

Q: I was going to say. I don't know how it was then; certainly now it has a reputation for having, among other things, a lot of murders.

DR. MICOZZI: Yes, it was even more so then. The murder rate may be twice as high in Miami as in a lot of other jurisdictions, but nonetheless, most of the cases were other things: accidents and suicides and natural deaths that were somewhat unusual. And so it was a real

chance to look at health at the community level.

Q: You were seeing a couple of communities. One would be, obviously, the affluent, but also I assume there was a Haitian community at that time.

DR. MICOZZI: Indeed.

Q: There was the exodus from Cuba there, and then your resident, rather poor blacks, too.

DR. MICOZZI: All that was going on.

Q: How did you find these various groups? What were some of the problems?

DR. MICOZZI: In Little Haiti, people didn't believe it, but within some blocks of downtown, you could find dwellings that had dirt floors and no electricity or running water. And it was in that context that you had infants dying of neonatal dehydration, which is typically what they die of in Bangladesh and other parts of the Third World. And it was the same issue going on in Miami.

The Cuban refugees, called Marielitos, were criminals who'd been really released to come to the United States.

Q: You were there just at the time to catch that exodus.

DR. MICOZZI: Just at that time. And there, of course, a lot of drug dealing, a lot of drug-related homicides.

Then, of course, this was a time of great tension between the police and the Afro-American community. Some deaths of black youths in detention, deaths in custody, was a big issue. Police shootings. A very tension-filled time in that community.

Q: Did you feel pressure from the police department? As a medical examiner going in to look at a suspicious death within their facility, did you feel you were going into a hostile environment?

DR. MICOZZI: Never. Never felt that way. In fact, I never really felt that it was a hostile environment wherever we went. I think the way that Dr. Joe Davis set up that office is really a model of the way a medical-examiner office should run in a community setting, with the kind of autonomy that's necessary to conduct objective investigations, but also some sensitivity to the fact that this is part of the community. I often say that a lot of the job in the museum, of course, is community relations, on not only a local but a national scale. And I learned as much from Joe Davis about community relations as anything else.

Q: Talk a bit about Joe Davis.

DR. MICOZZI: Joe Davis is the chief medical examiner, still, of Miami. He started out in New Orleans. Two people were recruited from New Orleans to come and head what was then the new medical-examiner office in Miami in the 1950s. And I believe that the senior person's name was Derlacher. But the two of them, the senior person and Dr. Davis, as the junior person, came to set up the office in Miami. Within a year or two, the senior individual died suddenly, and Joe Davis, at a young age, became the chief medical examiner in Miami and really made it into a model department in terms of their programs and the way they conducted their affairs. And then, recently, it's become a model office in terms of its facility. We were working the old facility, which was quite rudimentary, but in recent years, they have a new facility. So, in many ways, it's been a model.

Q: Because it's still a major issue, how about looking at the problem of trying to get proper health care at an early age to the Haitian group?

DR. MICOZZI: One of the things that I discovered, both from that as well as some of the anthropological studies, is that there are really two issues: one is what I call cultural access, and the other is structural access.

First of all, do people know what the problems are and how to go get the care? Is it part of their cultural knowledge? It's an educational thing.

The other part is structural. Assuming they want to go to a doctor and they know what needs to be done, can they get there? Can they afford to see the doctor? Do they have transportation? Do they know how to get to the bus? Can they use English well enough to enter that system?

And so I think both things are going on in limiting access to health among these populations.

Q: Were you able to work within that, using your background in culture and anthropology?

DR. MICOZZI: I found my background to be quite helpful in conducting my own field investigations, although trying to set that up on any more systematic or broad basis within a year as a fellow was not something that was successful.

Q: After doing that for a year, you finished when?

DR. MICOZZI: I finished in July 1984.

Q: And then where did you go?

DR. MICOZZI: I went to the National Institutes of Health (NIH). I was still working on the dissertation for my Ph.D., and I felt I wanted to spend some time really focused on research, so I could enjoy a full-time research experience, which I'd never had, and, incidentally, get this dissertation finished.

While I was still at Penn, I was asked, as a senior graduate student there, to sit in on a review committee, on behalf of one of my professors, that was reviewing a new intramural program at the National Cancer Institute (NCI) to study diet and cancer. And I thought, well, this is a fascinating new area. So I had been aware, for over a year, of this new program at the NCI on diet and cancer.

And so, then, when it came time for me to seek a full-time research experience, that's the group that I went to. They were interested in having me come onboard; my specialty was in human diet and nutrition, within my anthropology degree. It seemed like a great opportunity to come in and get involved in a new area of research, and I was really excited about that. I went to NCI for the position as what was called the senior staff fellow, and had two years there pretty much doing research full time.

Q: What was the approach, at the time, on diet and cancer?

DR. MICOZZI: At the time, it was considered a very new area, something for which there wasn't a lot of evidence. There was a great deal of skepticism, in fact.

I see an analogy to what's called alternative medicine today, something in which there's a lot of interest, and some people think there's great potential. There is, at the same time, a great deal of skepticism.

The importance, then, of doing scientific investigation is obvious. And so we placed great emphasis, ten years ago, on how one would show scientifically, as scientifically as possible, not only within the context of a single experiment, but within an overall scientific program, how one moves through a process by which one discovers the evidence for nutrients having a role in the prevention of cancer. And so the emphasis was on setting up the whole process.

I actually wrote an article that kind of laid out how you go from the initial observations in different populations around the world to ultimately proving something in the context of a clinical trial, and some of the special pitfalls, the way that one could look at this as a clinical drug trial, in looking at nutrients and cancer, but also the many ways where looking at diet and cancer is not like doing a clinical drug trial. I think a lot of attention needs to be paid to that latter point.

That article was looked upon with favor by a publisher, a very good technical publisher, who then encouraged me to put together two edited volumes on the whole topic. The initial idea was, well, we want a book that says everything we know about diet and cancer. Well, ten years ago, we didn't know that much about diet and cancer, in the truest sense of the word. So I said, "Well, we could do this, but we'd emphasize the process of investigation." So that the book was really *Nutrition and Cancer: Investigating the Role of Micronutrients*, and the second volume was *Investigating the Role of Macronutrients*. The emphasis was on investigations, how one conducted scientific investigations in this new field. What are the sources of information? What are the methods? What have we found out so far? What's the basis on which we're proceeding in this type of investigation? I felt that it really required an emphasis on scientific investigation, rather than having a lot of real solid results to go on.

Now, ten years later, we're starting to get some of the actual results of clinical trials.

Q: Were you looking at that time both at what might prevent, but also what might cause? I'm thinking particularly about the many additives to food.

DR. MICOZZI: Right. The focus at the time centered on the deficiencies in the micronutrient area that might contribute to cancer, and then the supplementation of certain micronutrients--vitamins and minerals--to help prevent cancer, particularly in groups that were at risk.

Now the notion of food additives--pesticides and contaminants--was played down a little bit, because a book was done by a couple of British epidemiologists, and somehow we always think that what the British have to say about our country is that much more worthy of note than what we ourselves discover. But, anyway, that got a lot of attention. It was called *The Causes of Cancer*, and it really looked at population-attributable risk; that is, what is the proportion of cancer in populations?

If you take something like smoking, of course, the relative risk is high, but only about a third of the population smokes, so the attributable risk is maybe ten to fifteen percent of total population.

Everyone, of course eats, and so even though the relative risks may be small, the population-attributable risk could be quite significant. And, of course, people were saying a third or two-thirds of cancer may be caused by diet. But the focus was on the nutrient composition of diet itself; that is, too high in macronutrients--fats, calories, possibly proteins--too low in certain micronutrients, rather than really looking at the contaminants or the additives, which were felt to be down in the range of single-digit percentage, compared to the actual nutrient composition of the diet.

Q: This brings us up to the main focus of what we want to talk about today. You got your Ph.D.

DR. MICOZZI: Right, I actually finished my dissertation over the two years at NIH, actually got awarded the Ph.D. the summer of 1986, just after I began here.

Q: Let's talk about the Armed Forces Institute of Pathology. Had you had any exposure to it prior to coming here?

DR. MICOZZI: Sure, as a pathology resident, of course, one knew of referrals that went to the AFIP. One heard a lot about it, that people in the various pathology departments around the country had spent time at the AFIP, either as fellows or staff members, or for shorter visits, or certainly had attended one of the courses. And, of course, we used the fascicles, which were the ultimate referral resources for the various pathological disease classifications. We thought that was the ultimate source of information. So we knew about the AFIP. And certainly many of the individuals who worked here were those who wrote the seminal articles on various topics for textbooks that were widely used. So the name of

the institute as well as some of the senior scientists here were well known to people in the field of pathology.

Q: While you were at the National Institutes of Health, did you get over here at all?

DR. MICOZZI: No, I didn't. There were others who did, actually. But I was not involved in the projects that would have sent me here. I went to USDA on nutrition research, and other places around the country, but not here.

Q: How did you get involved with being at the AFIP?

DR. MICOZZI: How did I get involved? Well, the immediate how was, one of my colleagues, Chuck Boone, who was more senior, he'd worked various places, including Saudi Arabia, as a pathologist, he was also a pathologist, but had gotten into this same field as I with cancer at NCI, and he told me that there had been an announcement in the *Washington Post*, looking for medical-officer pathologists with background in anthropology or history. He thought that because of my own background, that was something I should know about. I remember I initially looked through the Sunday paper and didn't see it, so I told him he must have been pulling my leg. But he said, no, no, it was there. We did find it, and I thought this was something I really had to investigate, because of my background.

I remember calling the recruiter at Walter Reed. This was during the time of the Donald Billig difficulties at Bethesda Navy Medical Center.

Q: You might explain what the difficulty was.

DR. MICOZZI: Yes, he was a Navy surgeon who worked at Bethesda National Naval Medical Center, and he got into some difficulties with, essentially, malpractice, apparently. And then, as they looked into his background, they found that a lot of his credentials were not very well defined. What was happening was that the military was then imposing a new set of guidelines for checking into credentials of all medical personnel. I'm told that I was the first person to be hired at Walter Reed under the "Billig" Rules, which is where they go back and look at everything right back until kindergarten. Each week, there'd be another level of information that was needed, so I had a very thorough background check, with transcripts and things, going way back.

But I remember when I first called that recruiter, I called and reached the right office, and I said that I was interested in applying for the position of pathologist/anthropologist.

She said, "Oh, well, are you a pathologist or an anthropologist?"

And I said, "Both."

For a moment there was silence, and then she said, "Well, you've got to come in here and apply for this job."

So I went in and went through that application process. The first time I actually visited the museum was in February 1986, when I came for my interview. The AFIP had

set up a panel process.

To be perfectly honest, I was a little concerned that there wasn't a great deal of knowledge or understanding about what a museum really is and what it could be and how it could operate. It had been a long time since the museum had really had something that you might recognize as a mission or professional museum standards of practice. A lot of that had just gone by the wayside many, many years before. I found a really vestigial organization that had a lot of interesting collections, but not any type of public program to speak of; something that had a lot of potential, but needed a great deal of work. I remember being a little bit discouraged on my first visit just to see what the exhibits looked like and to see the attitudes of those that worked here. It was pretty discouraging, and I almost didn't come.

But there were a couple of folks on the staff, Adrienne Noe who had preceded me by about a year, who had a lot of faith in it and saw a lot of potential for the place. Also, I have to tell you that the junior deputy of the AFIP at the time was Bob Karnei, and I think he saw some of my concerns and some of my hesitation, and made a great effort to reassure me that he cared about this museum and would support me in doing what needed to be done to revitalize the museum. So I really felt that, between some of the key staff there in the museum and the leadership of the institute, there really was a commitment to get the job done.

Q: How did they present it to you? Were they saying, all right, the museum is at this status right now, and we want it to go from here? What did they say was the mission and what they wanted to do?

DR. MICOZZI: Well, for that sort of mission, I think the focus was on improving the operation to get better control of the collections and their status. They were not in very good shape in the way they were being physically provided for. To impose some standards of practice. To make the museum active as a unit of the AFIP, which meant doing some in-house research and also facilitating research from other people in the institute and elsewhere in the country. To do educational programs, the focus initially being professional education, such as our forensic anthropology course. I think there may have been less thought or understanding of the role that this museum once had, and should and can have again, as a national resource for the public. That was something that really had to evolve subsequent to my arrival, I believe.

Q: In '86, was the museum open?

DR. MICOZZI: Oh, yes. Just going back quickly, of course, the museum had been on the Mall. On October 8, 1968, it was closed down and the collections went into storage, basically. Ultimately, a south wing was added on to this building to house the museum. That was opened in September 1971. The museum came back in here and began receiving visitors. Within a year or two, it was closed again and the south wing here was used as the first home of the Uniformed Services University of Health Sciences. So the museum closed

down a second time and things went into storage. When USUHS moved out into their structure in Bethesda, the museum reopened.

Q: This was when?

DR. MICOZZI: This was the period of 1976 to '78. In fact, I remember, when I was overseas in Asia, which was '76-'77, corresponding with Captain Van Peenan (that's one name I remember) and others who were just getting this USUHS thing going, because I was interested in some of the public health and tropical medicine activities, which, of course, are highly relevant to the military and that were being included in this new USUHS curriculum. So it was just at that same time. I think the museum reopened in about '77 and '78. By that time, we'd moved from the mall, reopened here, closed again, and reopened again. The attendance had drifted down to about 25,000 a year.

What had immediately preceded my being hired was a Department of Defense (DOD) inspector general's investigation of the institute that found that the museum really lacked a mission, seemed to lack direction and purpose, and that the museum could either be closed or transferred to the Smithsonian. That was the inspector general's recommendation in 1985. I think that recommendation led the institute to get very active about trying to, first of all, create a reasonably competitive position for a museum director to come in and really do what needed to be done. What I didn't realize at first, but quickly came to realize, was that one of the motivations for getting serious about hiring a museum director, which there had not been for about two and a half years, was to respond to the DOD inspector general.

Q: Looking at it at the time, and maybe in some bit of retrospect, was the feeling the normal bureaucratic thing: Gee, we've got a museum, it's ours, we can't let it go? (I'm thinking about bureaucratic inertia and all that.) Or was it: We've really got to get this thing going and it's got to have a mission? How did you find the organization?

DR. MICOZZI: Both elements were there. I think the thing that you have to realize is that the museum is so bound up in the history of the institute. In fact, for most of its life the institute was a museum, a great 19th century science museum, doing all the things that one expected great public and scientific museums to do.

The mission became very narrow during World War II, through the Pathology Referral Consultation Center, and the larger, broader scope of the museum then really got lost in that shuffle.

The potential was still there, of course, the history was still there. No one can take that away. People can take away our future, but they can't take away our past. That's been a lot of it, I think, just the history and the heritage that's been a very positive factor.

In terms of this recommendation to transfer the museum to the Smithsonian, that may be fine and good, but the problem is, DOD never checked with the Smithsonian. So, of course, we began making those inquiries when I got here. It turned out that the Smithsonian sees this as a place that's really a source of health and medical information, and that even

though there are operations that are museum-based operations, the mission really is a health-related mission.

People make an analogy to 1962, which is when the Surgeon General's Library, which has been an administrative part of the museum since 1862, came out of the museum and the institute after 100 years and became the National Library of Medicine (NLM). There was discussion at the time that the original bill actually was Senator John Kennedy's and Senator Stennis's, who got together on that 1956 legislation, and it became a reality in 1962.

If one looked at the fact that this was a library, then what was the federal agency charged with operating libraries? Well, that's the Library of Congress. So if you focused on operations, there was some discussion that the National Library of Medicine ought to be part of the Library of Congress. So they'll run a library and do what needs to be done. But then if you focused on missions, it was recognized that the purpose of the library was to provide health information; in the case of the NLM, health information primarily to the professions. So if one focused on mission, which is really the higher purpose, the higher identity of something, not just operations, then it really belonged with the Public Health Service. And that's what happened.

Q: Could you describe the museum as you saw it? How was it set up?

DR. MICOZZI: Of course, the first thing you see are the public exhibits. And what I remembered was being confronted with row after row of glass cases with specimens in glass bottles, without a lot of interpretation; stuff written at a level that only a physician or a pathologist could appreciate; something that was not at all friendly to the public. Of course, as a public museum, your first goal is to have something to offer. If you're going to be open to the public, you have to have something to offer the public. So I saw that as a real deficiency.

And then the other thing was just a lack of professional standards of performance in the museum itself. I realized that we didn't really have the personnel we needed to work with.

In the first few months, when people became aware that I was going to insist on professional standards, and that I was going to insist on performance, I think people got the message, and a lot of them just left on their own, which made it easy to then start bringing in people with not only the right background, but also the right attitude.

The museum had just degenerated into a typical bureaucratic entity, with the focus on how many days of leave do I have, and how many years to retirement. This is what people talked about; this was their concern. The new director was going to come in and fix things to make it a better bureaucracy.

And my point was, no. First of all, what's the purpose of this? What are we offering? What are we giving back to the taxpayers here? What are we putting out in terms of research and new knowledge, in terms of public education? Nothing was really happening.

I guess, fortunately, people who wanted to be bureaucrats found some other place to

go and be bureaucrats. And we put an emphasis on getting professionals in there, who happened to work in a somewhat bureaucratic setting.

Q: Museums in the last two decades or so have undergone quite a bit of change, from being just repositories where people came in and looked, to being places that grab people by the collar, lead them through, and teach them as they look. It's a whole new different science; it's interpretation and reaching out to the public. You were not coming from a museum background, and there was this whole new almost profession of museology. Were you able to tap into that, to get some people who had exhibit expertise?

DR. MICOZZI: We basically had to build that from scratch. There are people now who really have as their primary discipline museum work. I remember having discussions with some of the staff when I first came (in fact, there's even a book that was written about this by Charles Osgood) on whether it's better to know a discipline well, like history or anthropology, and then come in to work in a museum setting, or whether you really need to be a museum specialist and then come in. I think, obviously, a mix of the two.

We've had a constant desire over the past years to improve our operations as a museum, the day-to-day operations, so that we look like and feel like and run like a good, full-service museum. And we've always tried to have place holders for a public education program, even when we didn't have the people and resources, for a research program, for collections management; to recognize that all these things are part of our organizational element, while we were waiting to get either the right people to come in or new positions that we needed to come in and do these things. I think we're on the right track, operating properly as a museum should operate.

Q: You have your druthers now. Could you go into some detail about what this museum, as you see it, should be doing?

DR. MICOZZI: This museum is unique. I think one of the goals has always been to keep what we call the front of the house (the public side) and the back of the house (the research, technical support, collections) together, because there is a rich relationship between the work that goes on in the back of the house and the work that goes on in the front.

One should not simply be interpreting knowledge that's generated somewhere else, one should be part of generating new knowledge, whether it's on the historical scholarship side or the human biology side, which we're active in, the work with the institute in terms of pathology and understanding disease. I think it enriches a science museum to be involved not only in interpreting scientific information, but in generating, creating new knowledge. And so that's always been an important part of this museum in our institutional setting. I really think the full potential of a science museum is to do both. What I've wanted is for this museum to be for the health sciences what the Smithsonian is for the earth sciences. Not just be an exhibit hall, not just be a science center, but a place where we actually study nature in its broadest sense as related to health issues, and are not just interpreting that.

There are many forces that tend to keep those apart; very practical, in the sense that

our exhibit facility will be on the National Mall, whereas our collection and research facility will be increasingly located out in Gaithersburg, Maryland. That's a logistical reality that one has to overcome for this philosophy that we're talking about.

The Smithsonian's confronting it now, trying to preserve the monumental buildings in the public areas of the Mall for the public, and increasingly moving collections and technical support and research activities to the museum support center out in Suitland, Maryland.

This is a physical reality that we have to face, while we try to keep the philosophical whole of the museum as a place that generates new knowledge as well as interprets that information for the public.

Q: I'm 66 years old, and I recall going, in knickerbockers, to look at the old red brick museum on the Mall. This was a great recruiter of medical personnel. Young boys and girls would go look and say, gee whiz. Do you see this as a goal?

DR. MICOZZI: Absolutely. One of the main goals of the new museum is not only to preserve our history, but to educate the American people about health and medicine in the context of history and culture and social development, which I think is an important context for everyone to know, professionals and the public alike. But also, particularly for young people, to try to reach them in special ways and to try to get them to consider the possibility of careers in the health sciences.

Q: You came in '86, we're now in '94, that's eight years. Where is the museum today?

DR. MICOZZI: Well, I think we're about halfway there, in any way you want to look at it, in terms of our timetable for our new site, in terms of building our staff, in terms of the kind of staff we have and the number of staff we have, in terms of our operations. I've talked of this time as being at high midstream. We're no longer at the beginning; we're certainly not at the end, but we're certainly on the path to that goal.

As I said earlier on, for the first year or two that I was there, everybody agreed that the museum needed to be revitalized; that is, to have a public program, improve our professional standards, improve our professional output. We did all these things.

It was only after the first year or two that we could talk seriously about relocating the museum. If you're really, then, going to focus on the mission of reaching the public, this is simply not the right location. And even though there were things that we could do to improve our visibility, there was very little we could do to improve our accessibility. In fact, I think we've shown that we could improve our visibility, with some of the public programming that we've undertaken that's gotten local and national attention. And our attendance has almost tripled. But, nonetheless, there are limits to what you can do.

Q: Yes, it's too far out. The museum is at Walter Reed, which is on the outskirts of Washington and just not on the tourist track.

DR. MICOZZI: Just not here. And public transportation is not particularly convenient, and there's no parking once you get here, and not that much that can be done to make it more accessible.

So really a lot of the effort, then, after the first couple of years, was driven towards acquiring the new site and all the planning that's involved in something like that: the site selection, figuring out how you're going to pay for it, getting the support in Congress and in the private sector. This was always seen as a public/private effort, not something that the government was going to do, and therefore required a new model of doing things.

Fortunately, the AFIP and the ARP and the legislation that we have from 1976...

Q: ARP?

DR. MICOZZI: The American Registry of Pathology, created in 1976. That legislation is important because it expanded the governance at the institute and the museum beyond DOD to include the other federal agencies that have activities in the health and medical areas.

Q: And it established the AFIP as an entity that couldn't be messed with.

DR. MICOZZI: It's a governance that gives us a certain independence as a unique national resource. It isn't just for DOD, or even just for the federal government, but is also mandated to work with the civilian community. It's been under that legislation that we've been able to get as far as we've gotten. So they showed a lot of foresight when they created that legislation in 1976. It was an early example of the public/private effort that everybody talks about today. We get a lot of encouragement from Congress and the leadership of the Executive branch to engage in public/private efforts. But the bureaucracy in the middle doesn't have a whole lot of machinery developed yet. I've spent a heck of a lot of time, and worry, really, coming up with mechanisms that are acceptable to the bureaucracy, but also meet the intention of having a public/private effort.

Q: You say you've tripled the number of people coming here. How did this come about?

DR. MICOZZI: ...information, simplifying our visiting hours. We had a very Byzantine series of visiting hours, again, that was done more to accommodate bureaucratic schedules than it was to accommodate the public. We'd gone to three different sets of hours, at different times of the year, and what have you. I was sitting down and saying, "There's got to be an easier way than this." And I tried to figure it out. Then I simply opened up the paper and I saw the hours that the Smithsonian kept, and I figured, "Well, there must be some pretty good reasons." So I said, "Let's just go to the same hours as the Smithsonian, then we'll keep it simple for everybody."

So, little things like that I think have been helpful. Having people know we even exist...

Q: School tours come through here, don't they?

DR. MICOZZI: Sure.

Q: How have you found these to be going?

DR. MICOZZI: Well, they go very well. Obviously, this is a popular activity for schools. We've really created a program where we try to match, to some extent, the interest and the educational level of the school group to the individuals who give tours.

One of the important things that we've done to help with that is create a volunteer program. When I came here, I asked for some advice from someone as to how to set up a volunteer program, because no museum can function without one. And the answer was, "Well, in my opinion, there is no place for volunteers in this museum." Well, of course, that's wrong. And one of the early things I set out to do was to create a volunteer program. We got one of the senior docents from the Smithsonian to come here and set up our program. And it's still running today. We've trained about a dozen volunteers every year, and they're the ones who are available to give tours to groups that call ahead to make a special arrangement. So we try to match our volunteers to the interests of the tour group as much possible. These are retired school teachers, retired physicians, nurses, everything in between, as well as some people who are still active in their professions and come in on the weekends, when we have our largest volume of visitors.

So that having a volunteer program, having a tour program, are simple things that we've done.

Getting our name out in the media is another thing that's been quite successful. Sometimes we see a dramatic rise in attendance in response to a lot of attention in the media; other times, it's imperceptible.

I think we have reached a plateau, though.

Q: As they say in real estate, it's location, location, location.

DR. MICOZZI: Absolutely. Absolutely. That's why the emphasis has been on getting the right location for this new museum. And we think we've got the right one. But it's tough real estate to get. Land on the National Mall is not easy. As we've gone and met with involved parties, like the Architect of the Capitol, the National Capital Planning Commission, the Fine Arts Commission, we often hear that there are 14 other national museums that want to be on the National Mall. But I don't hear too much about them.

Q: Well, of course, you can always say, "We were there before anybody else was, really."

DR. MICOZZI: Sure. Sure. And we were.

Q: I would assume much of the desire for museums are from both various ethnic groups and, you might say, political-cause groups.

DR. MICOZZI: Sure. This is not the character of our efforts. Our effort is one that reaches everyone who has an interest in their own health.

Q: Before we move to whither the museum in the future, what are some of the most popular exhibits today?

DR. MICOZZI: The interest is always there in terms of the exhibits on the human body itself: basic anatomy and physiology, pathology. This is something that we've upgraded recently. And we've received some additional funding through the Public Health Service to improve and begin modifying and developing our exhibit program in the direction we want to go, ultimately to the National Mall; what we think of as a prototype exhibit. We're just completing a major section of the museum on the human body itself. Needless to say, there's great interest, because everyone has one of their own, and we seek to present that. Again, an historical concept for possible basic science literacy about the body and how it works, and tying that, where appropriate, to contemporary health recommendations. But we feel that one of the unique things about a science museum is that one can tie these modern health recommendations that are made to an underlying understanding of human biology, and that science literacy becomes the basis, then, by which a science museum can launch into getting into the area of health recommendations and health education.

Q: Are there any comparable museums anywhere in the United States or abroad?

DR. MICOZZI: None that are really comparable to the museum today. There are a couple of museums that kind of stopped the clock at whatever point in their development; what I think of as jewel box museums. A few in Europe. Certainly the Mutter Museum at the Philadelphia College of Physicians would be an example. They actually consciously went back and recreated what the museum looked like about 100 years ago. That's something that's been done in Philadelphia. We don't feel much need to do that in Washington, but there is a place like that. There is another museum, the Cleveland Health Museum, that has focused purely on health education, with less of an emphasis certainly on history, on the science literacy side of human biology.

And there is an increasing interest that we've been involved with at the large science museums around the country in having more in the area of health and medicine. The big science museums in Boston, Philadelphia, Baltimore, Chicago, Los Angeles, and San Francisco that really have covered the whole span of science--physical science, chemistry, astronomy, etc., are now seeing the need and the interest among their visitors to have more programming in health. And so we have been involved from the beginning in this national health sciences consortium, where the museums work together with us to develop and implement exhibits on health. Our first project was on AIDS, which has now been implemented nationally. We have a second project in the works, on women's health issues, and more in the future that are being planned. We work with these other large science museums so that exhibit concepts and educational programs that are developed in

Washington, or anywhere, can be shared among the nation's science museums. When we move to the Mall, we hope to have millions of visitors a year. But we also know that if you look at all the science museums in the country, there are maybe 50 million visitors a year. And you can reach those people by sending your exhibit programs out into the other museums.

Q: How have you found the support up to now from the administration of the AFIP? Have you found that you're off to one side? You have various, rather strong departments within the institute. Have you found some departments are more interested in what you're doing than others, or is everybody sort of going their own way?

DR. MICOZZI: Well, we're definitely off to one side. I don't think we can be seen as just another pathology department within the institute. I remember one person said the museum really ought to serve as the gross pathology department for the institute. Well, of course, that's not the vision that I and others have had for it, nor is it the one that's historically true for this museum. So it is a bit off to the side as a pathology department.

But if one thinks of the institute in broader terms, as it has been, as a national resource since 1862, it's not at all. In fact, the museum is quite close to the center of this institute.

And what's unique about it is that the repository, the collections themselves, the unique historical materials also have great contemporary value. We're using new imaging technology to get a lot of our anatomical collections, which have been only of historic interest, and create new ways of imaging those that provide new knowledge about human anatomy, developmental anatomy, and other aspects of anatomy that are quite current and quite important to modern biomedical science. So it isn't just history, it's the fact that these collections have a lot of contemporary significance as well. And that can be developed, as we have done at the museum.

So I think that, even though the museum is peripheral as a pathology department, it's really quite central to the institute as a unique, federally supported national resource that does a lot more than just providing pathology consultation services, which is being done in a lot of places around the country, largely because of the success of the AFIP.

Q: This is a theme, as I go through these interviews, that at one point this institute, in the field of general pathology, was unique, and now its sons and daughters have gone out there, and so it...

DR. MICOZZI: It's been a great success. If you look at it from the federal standpoint, from the standpoint of the taxpayers, an investment was made in this institute, and it's done a great job in terms of establishing practices and training people in the field of surgical pathology. But as I've pointed out, this is not the Institute of *Surgical* Pathologists, it's the Institute of Pathology. And if one thinks about pathology as a broad study of disease, the type of context we've been talking about all through the interview today, and if one thinks about what is unique about the institute as opposed to what is the same as every other

medical center in the country, then I think one really focuses back on the museum and the history and the repository and our ability to reach the public as a national museum. Those are the things that are unique. Those are the things that really should be and can only be supported at the federal level, as a national resource. And so, in that sense, I find the museum quite central to the institute, even though it's peripheral from the point of view of a pathology department.

Q: You were talking about old specimens within your collection that now, with new techniques, can become new. Where does this fit with the museum side as opposed to one of the departments that could deal with that?

DR. MICOZZI: I think we put the emphasis on collections management. These are not individual cases, as you would find getting the attention of these departments, but collections that begin to lose their identity as individual cases and become more a collection. It gives you a chance to look at variability, norms, statistical approaches. It's the difference between a collection and a case, and when something becomes a collection, that's when you need museum standards of management, care, operation, as well as the R&D components. I've put a lot of emphasis lately, in fact, one of curators has really been devoted fulltime to collections research and development; that is, developing the new techniques that will allow these collections to have their greatest value.

Q: What about collecting artifacts, new microscopes or what have you, or even ancient medical instruments? Do you have much of a budget to do this sort of thing?

DR. MICOZZI: We don't really have an acquisition budget at all. Our collecting has been somewhat opportunistic, in the sense that we certainly have an idea of what our collecting areas are or should be, and then opportunities present themselves. People know about us in that side of the world, and we're often presented with opportunities, and then we have to make decisions about committing resources. One of the binds that we get into is that if some other organization has the funds to support a collection, why would they give it to us? They often bring it here because they no longer can make the investment in staff, space, and budget to do this. So we can often work things out so that we get some support that's brought in with the collections that we acquire here.

Q: Why don't we talk now about whither the museum. How do you see things? We've reached an interesting point in time, haven't we?

DR. MICOZZI: I think, really, the remaining challenge is not so much the concrete one of the site and the design and getting the building built, but it really is the operational side. Because just as much as we're talking about a new facility, we're really talking about a new way of doing business.

We have a new model of working with a private foundation, chaired by Dr. Koop, a former surgeon general. We were very fortunate. I remember this foundation grew out of

an ad hoc group (we called it the blue ribbon panel) that was led by the undersecretary of health in the Reagan administration, Don Newman. We met every month to look at the role of the museum, not just as a self-defining exercise, but as a way to discover what do other people in the community of health and museums and business see the museum providing? What needs are there that are not being met that the museum could meet? So the process of defining the role of the museum was not just an internal exercise, but very much one of reaching out to others through this panel.

That was the mechanism by which the idea of moving the museum to the National Mall became official, even though it was something that I really had in mind from my first coming here.

But in addition to the idea of relocating the museum, it was coming up with new ways of operating, where we weren't going to ask the government to double our budget, but we were going to find ways to raise money from the private sector.

The real challenge right now is: How do you work that out so that you can run a museum as a single, unified entity, while deriving half of your budget from nongovernment sources and the other half from government sources? That's a bureaucratic challenge that I find really to be the most difficult thing.

The other things were rather straightforward, in the end. How do you build a building? When I first came here, I didn't know how to build a new museum. But I knew that museums were being built--there was the new National Museum of Women in the Arts; the Holocaust Museum. I didn't know how to build a new museum eight years ago, but I knew that new museums could be built. They were being built for lots of reasons, and I figured that building one for this reason was just as good. And so, with that faith, we talked to people and learned and set up the mechanisms by which, indeed, an idea or vision can be translated to a reality. So that part was actually straightforward.

The remaining challenge is just: How's it going to work when you've got half of your money coming from outside the government and half coming from inside?

Q: Do feel that there is the money there?

DR. MICOZZI: I think so. I think it's pretty obvious that for this type of a program and a location like that, there is money.

Q: What about the location? Has any decision been made on that yet?

DR. MICOZZI: Sure. The Congress has introduced legislation, which was announced on May 13, 1994, to designate the site for the new museum. And that location would be known as 100 Independence Avenue. It's the East Plaza of the Humphrey Building, which would put the new museum right next to the Department of Health and Human Services, at the foot of Capitol Hill, and across the street from the U.S. Botanic Garden. And so we're really talking about the southeast corner of the National Mall.

Q: Have you gotten to the point where you're beginning to look at how to design the

museum?

DR. MICOZZI: Sure. In order to really focus on that site, there were some preliminary steps that were funded, again by congressional appropriations primarily for the Public Health Service. First of all, would this site be feasible from an overall design and structural standpoint? The general feasibility study was positive. Then it went on to a structural and engineering study--could this site physically support a structure in the rough dimensions that we were looking at? And then finally the environmental assessment--what would be the impact on the immediate environment? That's going on right now.

One of the other things happening in the same immediate environment are plans for a new national garden that will be next to the Botanic Garden and across the street from us, and also plans for the new National Museum of the American Indian. From a programming standpoint, I've begun talking to the directors of the Indian Museum and the Botanic Garden about some joint programming, on things like medicinal plants, on things like Native American medicine, all of which form part of our program.

So, part of it, of course, is the facility itself. We've found that the site is a feasible site, and we're now having the site dedicated to this purpose through congressional action.

But the other part of the equation, which is just as important, if not more, is what is the program? What are we going to be showing the public here? What are we going to be doing? The overall interpretive program. And we've had what we call an exhibit master plan for the past year that really defines the interpretive program. It seeks to define the total experience of someone coming to this museum and, within the envelope of this building, what we are going to be doing with the public. So we have that definition. That's about a 30-page document. And as we get into the design of specific exhibits to go in that envelope, of course, we add to the detail of that master plan.

Q: Since you're building for the next hundred years, at least, you have to allow for a lot of flexibility, don't you? I assume there's going to be a time when you'll walk in and you'll stick your hand into a machine and it will give you a whole DNA runout or something. All sorts of things are going to be happening at a rather fast pace.

DR. MICOZZI: Yes, well, one thinks of the museum as an envelope, within which the exhibits and programs will go. And, of course, the other thing you have to think about is room for expansion. There is that potential, although we don't talk about that too much. It makes people nervous.

Q: Talking about some exhibits. Recently, you've had one here at the museum on Lincoln, testing his DNA and all that.

DR. MICOZZI: That whole proposal was something where we tried to learn a lot from a little, both literally and figuratively. There are a lot of issues about how one handles collections and how one handles materials that really are part of someone's mortal remains. That's a special challenge in this museum, where I think we need to have some leadership in

resolving those kinds of issues. And then also the public education side of things. Of course, Lincoln is an uncommonly popular historic figure, and the minute people hear about Abraham Lincoln, they're always interested in learning more. Any new fact about Abraham Lincoln is thought to be of great significance.

Well, we had a proposal from a molecular geneticist, asking us to make available small samples of the Lincoln autopsy specimens for the purpose of DNA testing to look for Marfan's syndrome. He felt that he was a molecular geneticist closing in on the gene for Marfan's. Turns out he was wrong, but at the time, he thought he was closing in. Others were in fact closing in on that gene. And one should, once and for all, do a test, assuming one could recover the DNA from these specimens, and answer a question that has gone on for some decades about whether or not Lincoln had Marfan's syndrome.

Q: What is that?

DR. MICOZZI: Marfan's syndrome is the most common connective tissue disorder, where there are abnormalities of bones and joints and the way they grow and the way they're attached, vis-a-vis the connective tissues, that lead to lots of problems--abnormal heart valves, aneurysms of the aorta, displacement of the lens of the eye, easy injuries and dislocations of bones and joints. Of course, there's a range of how severe this is expressed in different people. But it's a classic genetic syndrome, basically, that can be a trait.

And so there was a lot of discussion about this. It would have been easy for us to say no; it would have been foolish to just go ahead and say yes. So we felt we needed to look at several questions before continuing with this.

We really felt that before even looking at this, we should consider the social and ethical and legal aspects. All of the research on the human genome today is accompanied by what's called ELSI (ethical, legal, and social issues). That becomes part of it. So we felt that we should look at this first, before really talking about how this might be done from a technical standpoint. So we got some outside support (this was not done with taxpayers' funds) from the AMA and the National Marfan's Foundation to convene a panel to really look at the ethical, legal, and social issues.

The legal one was really quite narrow; that is, that these materials were in the public domain. If there are no direct lineal descendants of Lincoln's, then legally we're the custodians, we're the guardians, and we just have to follow our own directives and guidelines in pursuing that.

But then, of course, there were the ethical and social implications of this kind of thing. In the end, it was felt that while there may not be that much historic value in knowing whether or not Lincoln had Marfan's syndrome, it was a chance to educate the public about the powers of genetic testing. That something like this was seriously being discussed, to go back and make a diagnosis like that on an historic figure. And if we're uneasy about doing this type of testing on Abraham Lincoln, who is a public figure in the public domain, then pretty soon we're going to have to make these decisions about ourselves and our families in terms of employment and other types of decisions. So, part of it was to just generate awareness around those issues, which is part of our mission.

The other aspect was really thinking about Lincoln and leadership. That our society was going through, and is still going through, a redefinition of what it means to have a disease and be disabled. The Americans with Disabilities Act was just coming up, and we felt that if Lincoln did indeed have Marfan's, it would provide another perspective on the capabilities of the human spirit to overcome and endure these types of problems, and perhaps help take away some of the stigma of genetic diseases themselves, which is a whole other issue.

There were a lot of social issues imbedded in this discussion about a very important public figure, about whom there is strong interest and strong feeling. And so we felt very serious about our obligation to approach this correctly.

We then went on and had the technical review, and found that there were some real challenges in trying to extract DNA from the nucleus of this type of material of this age. That one could look at the mitochondrial DNA, which is in the hair, and even though that doesn't tell you about Marfan's syndrome, it gives you what's called the DNA fingerprint. And that by doing that, you could at least establish the genetic identity, so to speak, of these Lincoln materials, and then allow other materials to be authenticated, because there was a lot of concern that we didn't have enough material to go on. But if we took this step of doing the DNA fingerprint, then others could pursue this elsewhere with materials that were purported to be from Lincoln.

Q: There were a lot of handkerchiefs and all supposedly with Lincoln's blood.

DR. MICOZZI: Exactly. Yes, this was like the pieces of the True Cross. We heard about a lot of possible sources of Lincoln's blood and this type of thing, which would be a reasonable source to do this type of study, but our own material was limited. We felt that we could satisfy our obligations to science, balanced with some of these ethical and social issues, if we simply ascertained the genetic fingerprint. And then this would be something that really enhances our own collections records. It tells us more about what we have without really compromising the specimens, from a collections' standpoint, and without having really crossed the boundary as the custodian of material and then getting into medical testing. Because if we had this information and someone else wanted to make use of it, then we would have met our obligations.

As it turns out, we haven't received authorization to proceed with any of this from our own board of governors. But it was a useful exercise.

Q: This is not the end of it.

DR. MICOZZI: No, it's not. It's just the beginning.

Q: There is something about an AIDS consortium?

DR. MICOZZI: Right. Well, part of what anyone thinks about an actual museum is its ability to reach out across the country. When I first came here, a lot of people said, well, the

way to get known, the way to really achieve your mission, is to mount traveling exhibits. Well, what you have to realize, from a museum operations' standpoint, is that's about the last piece of the picture, because in order to do effective programming, you have to have your collections under control. In other words, have intellectual control--What do you have? Where is it? What condition is it in? And some reasonable database on that information. Then you have to have an in-house program. You really shouldn't start sending exhibits around the country, either from a planning standpoint or a budget standpoint, before you have your own program in-house. And so, before you start sending exhibits around the country, do something in your own museum for your own public.

Well, in 1987, we had a chance to get some funding to do an AIDS exhibit. And I felt that we shouldn't really be a national health museum without having something about AIDS today. And that was something that, again, with the funding that was being made available, we were able to devote some of that for an AIDS exhibit here. And so we had some additional support that came in from the Public Health Service. We worked very much with the in-house staff here, and put up the first AIDS exhibit in the country, which was dedicated by Dr. Koop, while he was surgeon general, on June 1, 1988.

Now during '87 and the first part of '88, we worked closely with the surgeon general's office to develop the informational content, because the Public Health Service was putting out a brochure that was being mailed to every household in the nation on understanding AIDS. It was a black-and-white brochure. And what we wanted to do was to take the same information that was in the black-and-white brochure and turn it into a three-dimensional museum display that took advantage of graphics and sound and lights, a walk-through, experiential-type of approach to translate that black-and-white brochure into an exhibit. The mailing of that brochure went out during May '88, and on June 1 we opened the exhibit here.

I think that's one of the things that made Dr. Koop realize also the potential of this museum and other museums to reach the public with effective motivational and inspirational materials as well as educational. And so, having had the exhibit here, then, we had an interest in making it available. There was great interest around the country.

Well, it costs a lot of money to travel exhibits around the country. We didn't have the budget, obviously. We approached the CDC about it. Other museums, in Los Angeles, Chicago, also approached CDC. Finally, a Congressional appropriation was made to the CDC.

Q: CDC is the Centers for...

DR. MICOZZI: What was then the Centers for Disease Control. Now, it's the Centers for Disease Control and Prevention. Back then, Jim Mason was the director of CDC. He went on to become the assistant secretary of health in the Department of Health and Human Services. So we worked with him in both capacities.

The idea was that, rather than having every city in the country, Chicago and Los Angeles and Washington, spend two million dollars each on an AIDS exhibit... You know, Congress often makes correct analyses of these situations, and said, "Look, don't museums

travel exhibits? Why can't we spend two million dollars, once, to create one exhibit and travel it around?" Whereas it's more complicated than just that, the fundamental was correct. All you really need is to develop an exhibit once, and then you build in the costs of traveling it around.

So we came in. I was elected as the first president of that consortium, and I was able to accept that position when I left the government and went to work for the American Registry of Pathology. I led that consortium for the first two years, to get everyone together. It was, again, as much of an organizational task as it was developing the exhibits, trying to get eight different institutions around the table.

But that has been done, and there are three replicates of that exhibit traveling around the country now. It will reach millions of people each year for as long as it's out there. And that's really what the consortium idea was about. It's a way of having a traveling exhibit program. It's a way of being more than just a Washington museum, but reaching out, really being a national museum. Not just that we're on the Mall, but that we reach out into every community in the country, potentially, through traveling exhibits and other types of outreach programs.

Q: Well, coming back to the new museum. Were any other locations considered?

DR. MICOZZI: Oh, yes.

Q: Was the Mall always sort of there?

DR. MICOZZI: Well, returning to the Mall was something that was highly motivating in our thinking about this. There were 40-odd other sites that were looked at, at two different phases. There was the preliminary phase that the foundation undertook, a very low-budget look. And then there was an official study that was supported by the government, where there was a real market survey, using a real estate firm, basically. Of course, the Mall is always the best location for something like this. But if people were to ask me what is the second-best location, I would have to say that the second-best location isn't in Washington at all, it's in Baltimore. We even looked at sites on the Inner Harbor, and even in Richmond, trying to find the best possible location for this museum. As I say, in terms of reaching people and being situated in a public-access area, after the National Mall, the Inner Harbor in Baltimore is really second best. Don't tell Governor Schaefer that you can't have a national museum in Baltimore, because they've already got a couple. So, for a while, the Baltimore option was a serious one, but in the end, people really wanted to be on the Mall, and if at all possible, they would be on the Mall.

The character of the project in Baltimore would be quite different from the one in Washington, because in Baltimore, you'd be able to charge admission. Well, that's the other half of my budget I need. If I could charge admission, I'm sure I could raise half of this budget that we're going to have to get some other way in Washington, considering that we're not able to charge here. We certainly wouldn't want the health museum to be the only museum in Washington that you have to pay to get into. One member of Congress

indicated that the Smithsonian should start charging admission. If that happens, of course, we'd have to look at our own policy.

Q: I understand you recently had a breakfast ceremony on the site of where the new museum may be.

DR. MICOZZI: Yes, that was the May 13th event that I referred to earlier. The purpose of that event was to announce the introduction of the legislation to designate this site, and the announcement was made in a tent put up on the site for that purpose. We have strong support in Congress for that, in both houses. And then the other purpose was to publicly announce the commitment of the Kellogg Company to a one-million-dollar pledge, as part of five-million-dollar campaign for national nutrition education programs.

Q: Kellogg being the food company, known for breakfast food products and things like that. Are there any particular people in Congress who are particularly strong on this? Usually it takes a couple of leaders to get out there.

DR. MICOZZI: Yes, the leadership in the Senate has been Senator Hatfield, from the beginning. He enlisted Senator Nunn, who feels strongly about DOD's involvement and that it's an appropriate thing for DOD to do, unlike a lot of other museums. And Senator Kennedy, from the health side. And then, more recently, Senator Harkin, who is interested in the unique kind of research capabilities that we have, to look at some resources from our past, like medicinal plants and other healing traditions, which is something that's always been part of our program, something Senator Harkin is quite interested in, in a contemporary sense. He's gotten involved, but really Senator Hatfield has been the center of this.

Q: Senator Mark Hatfield of...

DR. MICOZZI: Oregon. I think it's a couple of things with Senator Hatfield. He remembers the old museum on the Mall. He would visit there with his family, and his daughter has become a physician, he says, based upon that early experience. Also, we got to know Senator Hatfield very well through this Lincoln issue. He requested information from us, and then we, of course, asked his advice on the politics of this whole thing, which could be potentially quite volatile. So he got to know us pretty well through this Lincoln project. His interest was both from a contemporary medical technology standpoint and from an historical standpoint. He's also quite an historian. That's really when his attention began to focus on this museum. And, then, he realizes the broader implications of reaching people with contemporary health information, helping them better understand how their bodies work, how the health care system works, keeping them more informed.

Q: It's really a natural, when one thinks about it. We have all the gadgets of war and space and all, but we don't talk about what keeps us going here.

DR. MICOZZI: I did an editorial in the summer of 1990, when we first really came out with the visions of this museum, that was published in the *Washington Post*, the "Close to Home" section of the Sunday editorial pages, and it really laid out this vision, with Dr. Koop, for a museum about ourselves, about how our bodies work and how to keep them healthy, and what goes wrong and what to do about it, as well as the medical technology that has developed to help deal with this, not only in our culture, but realizing that every civilization around the world, as far back as we can see, has also developed techniques for keeping people healthy and trying to treat the sick, and realized that there's great value in that, not just historical value, but contemporary potential there for us.

Q: Are there any other museum advocates who are sort of glowering at you, saying we want that space?

DR. MICOZZI: Well, you know, if you went to GSA or NCPC, the Fine Arts commission, any of them, and you asked, "Is there a space there?", they wouldn't have said that there is a space. That's something we discovered. And the way we discovered it really was, again, focused on developing the program more than the ultimate site. That is, we realized that the situation here is quite limited in terms of the access. We had close relationships developing with the Department and Human Services, so somebody suggested, at first in jest, that we just move our exhibits into the Great Hall of the Hubert Humphrey Building, at 200 Independence Avenue. They've got 17,000 square feet of space, two-story clearance. It's more space than we have here; it's certainly a better location and, in some ways, a better configuration. So the initial idea was, well, we don't know where we're going to end up, but let's get down where we can start reaching people sooner rather than later in terms of accomplishing our mission and getting the visibility for the larger projects. So, for about two years, we seriously looked at just trying to move into the Great Hall of the Humphrey Building.

Well, of course, it turned out that HHS had other ideas about that space. But it was during that time of having architects coming down and looking at what might be done with the interior spaces that some of them looked outside and looked across the street and said, "Well, what's over there?" And we began to realize that to really do what we wanted, one to accommodate not only a temporary exhibit, but that that site adjacent could really be adequate for the permanent and ultimate home for the museum.

And so it was really through that process. And then we began to realize, well, we're not going to go phase one, phase two, where we try to move to the Humphrey Building, even if they would permit it, and then be looking for a site somewhere else. Let's just forget that, and let's just go for this ultimate site.

And so we kind of discovered that. It's not so much that it's taken away from anyone, we simply discovered it.

Of course, this presupposes a close working relationship with the Department of Health, which one thinks is a reasonable goal for a national health museum. Even though there have been some bureaucratic obstacles, the basic idea has been one that the leadership

can support.

Q: We've been keeping you here for some time now. On this optimistic, futuristic outlook, maybe we might end this at this point.

DR. MICOZZI: That's fine. I think we've covered almost everything.

I think what I really should add is, I think the key to a lot of the success has been Dr. Koop, as an individual, as a leader, as someone who is bipartisan and has a reputation for putting health issues first. I think, if there's one thing that's been the secret of our success, it's our ability to identify Dr. Koop as a key leader, and to get him to do this back in 1989 has been one of the key things.

The rest is that there's a vision, there's a direction here. It's something that fits within the vocabulary of national museums, in many ways, with a health mission. And, of course, our history and the resources that our own history has provided us.

Q: Okay, well, I thank you very much, doctor.

DR. MICOZZI: Okay, good.